

WHAT IS CLAIMED IS:

1. A passenger air bag system for vehicles, comprising:  
a cushion expanded to the front of a passenger when a  
5 collision of the vehicle occurs;

an air bag housing mounted to an instrument panel at the  
front part thereof for accommodating the cushion therein;

a retainer attached to the air bag housing for  
supporting the cushion;

10 an inflator having the upper end vertically inserted  
into the rear part of the air bag housing in the normal  
direction thereof so that the inflator discharges gas to the  
cushion, and the lower end fixed to the outer circumference of  
a cowl cross member; and

15 an inflator bracket attached to the air bag housing for  
fixedly supporting the upper end of the inflator.

2. The system as set forth in claim 1, wherein the air  
bag housing is provided at both sides thereof with housing  
20 brackets, respectively, the housing brackets being fixed to  
the instrument panel.

3. The system as set forth in claim 2, wherein one side  
of the respective housing brackets is attached to air bag  
25 housing, and the other side of the respective housing brackets

is bent to the outside of the air bag housing so that the air bag housing is fixed to the instrument panel by means of bolts.

5           4. The system as set forth in claim 3, wherein the air bag housing is provided at the center of the rear part thereof with an inflator-mounting hole, the upper end of the inflator being inserted through the inflator-mounting hole.

10           5. The system as set forth in claim 4, wherein the inflator-mounting hole has a diameter smaller than that of the inflator so that the inflator can be forcibly inserted through the inflator-mounting hole.

15           6. The system as set forth in claim 5, further comprising a seal provided between the inflator and the inflator-mounting hole.

20           7. The system as set forth in claim 6, wherein the inflator has one or more gas-discharging holes formed on the outer circumference thereof adjacent to the upper end of the inflator, the upper end of the inflator being disposed in the air bag housing.

25           8. The system as set forth in claim 7, wherein the gas-

discharging holes are evenly formed along the outer circumference of the inflator adjacent to the upper end of the inflator.

5           9. The system as set forth in claim 8, wherein the lower end of the inflator is inserted through an inflator insertion hole formed at the cowl cross member.

10           10. The system as set forth in claim 9, wherein the inflator insertion hole has the same sectional shape as the lower end of the inflator, and wherein the cowl cross member has a connector hole formed at the lower part thereof so that a connector for connecting the inflator and an external device is connected to a connector-connecting member formed at the  
15 lower end of the inflator through the connector hole.

20           11. The system as set forth in claim 10, wherein the connector-connecting member is protruded from the lower end of the inflator, and inserted through the connector hole so that the connector-connecting member is disposed outside the cowl cross member.

25           12. The system as set forth in claim 11, wherein the retainer is provided along the edge thereof with a plurality of fixing holes so that the retainer is fixed to the inner

rear part of the air bag housing by means of fixing bolts, and wherein the retainer has an opening formed at the center thereof so that the inflator and the inflator bracket are disposed in the rear part of the air bag housing.

5

13. The system as set forth in claim 12, wherein the retainer is formed in the shape of a square frame.

10 14. The system as set forth in claim 13, wherein the inflator bracket is disposed inside the opening of the retainer, and wherein both ends of the inflator bracket are fixed to the rear part of the air bag housing, and the center part of the inflator bracket is protruded to the front part of the air bag housing.

15

15. The system as set forth in claim 14, wherein the inflator bracket is formed by bending a strip-shaped plate several times.

20 16. The system as set forth in claim 15, wherein the inflator bracket has a through-hole formed at the center part thereof, and the inflator has a fixing protrusion formed at the upper end thereof, the fixing protrusion of the inflator being inserted through the through-hole of the inflator  
25 bracket.

17. The system as set forth in claim 16, wherein the fixing protrusion of the inflator has a male screw thread part formed on the outer circumference thereof so that the fixing protrusion of the inflator is securely fixed to the inflator bracket by means of a fixing nut.

18. The system as set forth in claim 17, wherein the inflator bracket has a horizontal fixing surface formed at the center part thereof so that the fixing protrusion of the inflator and the fixing nut are smoothly coupled with each other, and the inflator bracket has inclined connection parts provided between the center part and the ends of the inflator bracket, respectively.

19. The system as set forth in claim 18, wherein the inflator bracket has a plurality of diffuser holes formed at the inclined connection parts thereof for allowing the gas discharged through the gas-discharging holes to pass therethrough.